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ABSTRACT

Although technology is potentially a powerful tool for improving the teaching-learning process, studies have shown that it is widely underutilized, with many faculty lacking expertise in and awareness of available technologies. Closing this gap between the availability of technology and faculty ownership of it is the function of an instructional technology transfer center. Strategies used by 11 representative centers to enhance and improve teaching and learning at community colleges include efforts targeted at faculty as a group, at individual teachers, and at the campus as a whole. Group strategies include conducting needs assessments to prioritize training interests, offering day-long workshops to train faculty to use software packages or mini-workshops of less than 2 hours to cover such specific topics as how to use a laser disc or test-generating programs, arranging vendor demonstrations of products, and establishing special projects and faculty teams. Strategies focusing on individuals include providing materials for independent learning; establishing curriculum application projects, offering release time, professional development awards, and monetary compensation; designating proficient faculty as mentors; and loaning hardware and/or software during academic breaks. Finally, campus-wide initiatives include newsletters to keep faculty informed of center activities, open houses and orientation sessions for new employees, computer fairs, involving faculty on center steering committees, and acting as a clearinghouse of information for vendors. Contains seven references. (KP)

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Strategies for Empowering Educators with Technology

A Presentation for the League for Innovation

November 1991

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Introduction

Technology has the potential of being a powerful and prevalent tool in the teaching learning process. Glenn and Carrier (1989) note that the past decade has seen an unprecedented growth in the availability of technology. The falling cost of technology, its greater accessibility and its increasing ease of use combine to promote its application in education. Administratively, most higher education institutions have committed significant resources to the acquisition and expansion of existing academic and administrative technology. All of these factors should result in a dramatic increase in the number of faculty using computer. Faculty, empowered with the available technology base, should be moving the teaching and learning process into the Information Age by leaps and bounds. This, unfortunately, is not the case.

Novak and Berger (1991) indicate that the results of their Computer Education Survey mailed to Michigan colleges and universities show that even with access to computers in their offices, most faculty do not use this resource in direct instruction. Pullman and Parsegian (1990) support this conclusion by noting that most educators are unprepared to use computer applications in any capacity much less in the classroom for instruction. Kozma and Johnston (1991) suggest that "on any one campus the [faculty who are] pioneers [in educational uses of technology] number less than five percent of the faculty" (p. 10). Clearly educators have not yet realized the potential of this teaching-learning tool.

There is consensus that the underutilization of technology as a tool in the educational process is widespread. Technology availability is increasing at a rate significantly greater

than its incorporation into the classroom. While some educators are using technology for management purposes such as writing tests and computing grades, relatively few are using the power of technology to teach. Most commentators on educational technology would agree that educators cannot use a tool they have not mastered themselves. Significant barriers exist to such mastery. These include lack of computer knowledge, lack of time and lack of training and help (Brady, 1991). Current inservice training practices have not provided sufficient time to master computer skills (Bitter and Yohe, 1989).

The vast majority of teachers have experienced little or no computer training (Glenn and Carrier, 1989). For many educators, technology training opportunities were unavailable in the preservice teaching curriculum when they completed their undergraduate training. Educators entered education without this valuable tool in their repertoire. Training has therefore become a key factor in keeping faculty in touch with technology (Farrente, Hayman, Carlson and Phillips, 1988). Until this situation changes, technology will be education's most powerful but underutilized resource.

Therein lies the challenge facing those involved in training in instructional technology. While faculty are moving into the Information Age, the movement is slow, sporadic and often met with resistance. Those responsible for providing faculty with technology skills must examine the issues that slow the process and explore strategies to overcome the roadblocks.

It is relatively easy to acquire equipment. It is easy to demonstrate to faculty its application as a teaching tool. Budgets permitting, it is easy to install the equipment on faculty desks. The challenge to those charged with connecting faculty to this equipment lies

in motivating educators to make use of this powerful teaching tool. Assisting the educator in effectively using the technology as a tool in their *own* classrooms is the goal. Closing the gap between technology availability and faculty ownership of it is the function of the instructional technology transfer center.

The Role of the Technology Transfer Center

Centers charged with training faculty in technology have as their overriding goal the transfer of technologies that can be used to enhance and improve the teaching-learning process. They are responsible for connecting the teacher to the technology that can support their professional efforts. They are the bridge across the technological gap. Centers must act as a professional resource providing both formal and informal channels for technology education. Strategies must be developed to help the teacher reach out to technology and embrace it as a powerful and effective tool.

The eleven centers contributing to this paper have each tried a variety of strategies in their efforts to assist their faculty in implementing technology within the curriculum. Included herein is a collection of their most successful approaches. Each of the centers differs in terms of the administrative structure in which it functions, the number of personnel assigned to it and the budget allocations that support it. They are similar in their IBM hardware and software. Despite the differing physical and financial parameters of these centers, all have made inroads into constructing an effective bridge between faculty and technology.

Technology Transfer Strategies

The following strategies range from traditional to innovative. All are effective, allowing for variations in the training parameters of the institution. The strategies are arranged according to their target audience. Group strategies target groups ranging from faculty teams of three or four to larger departmental and workshop groups. Individual strategies include those in which the centers have engaged to provide one-to-one support for faculty's use of technology. Campus strategies are those which impact all faculty on the campus and those which attempt to foster a positive image toward educational technology.

Whichever strategies are currently being used by your institution, the writer and ITTC Directors hope that you will find the following approaches useful, thought provoking, and effective when applied in your environment.

Group Strategies

Needs Assessment

A preliminary step to designing effective strategies is designing, distributing and analyzing a needs assessment. An assessment instrument can provide a training center with valuable information as to where to start. Faculty literacy can be determined and specific needs and interests can be identified. Often, an assessment prioritizes training efforts by highlighting the software and/or technology skills seen as most critical by the target audience.

One center whose faculty was relatively inexperienced, added a brief workshop description to the assessment instrument. This provided faculty with an annotated workshop

list that helped them to identify the software they would be interested in learning even if they were unfamiliar with computer applications in general.

Workshops

All of the centers provide teacher training via a workshop format. Workshops vary as to length and topics but there are several consistent characteristics. Each workshop typically covers only one topic, usually a specific software package. A workshop description and list of objectives are provided to the faculty with the workshop registration. The description details what computer experience, if any, is necessary as an entry skill and the objectives outline what will be gained as a result of the workshop. This assists faculty members in determining if the workshop is appropriate for them.

While the time allocated for a workshop varies with the complexity of the software, a workshop average is eight hours. Handouts are usually provided to the participants. While the format may vary, the handouts usually cover the key points presented in the workshop. This helps the participants concentrate on the presentation rather than on trying to write it all down.

Workshops are typically presented by center staff or by other faculty members. Often, presentation by faculty to faculty has, as a fringe benefit, the subtle message that technology is usable by every educator, not just educational technologists.

The most frequently mentioned difficulty with this strategy is finding a time suitable for the varied schedules of faculty members. Some centers have provided evening and weekend workshops to accommodate the faculty. Most try to offer workshops at different

times and days each term in order to accommodate as many schedules as possible during the school year.

Mini-Workshops

A variation of the workshop format is the mini-workshop. This presentation is usually not more that two hours long and covers a very specific topic. Examples of mini-workshops include teaching a department how to use a laser disc, showing a test-generating software package to a group of teachers, demonstrating how to use a display palette, or conducting a departmental software evaluation for a new subject-specific package received by the center. Mini-workshops are more informal, have less elaborate hand-outs and are usually facilitated by center staff. The objective is typically to demonstrate a single piece of hardware or software to a group that has expressed interest.

Vendor Presentations

As a variation of the workshop and mini-workshop format, a presentation by software companies has proven effective at some centers. Software companies often provide public relations personnel that will present at your institution to interested faculty. Vendors are, of course, interested in promoting their product. However, centers can take advantage of that interest by allowing vendors to demonstrate products without cost or obligation to faculty. Usually these demonstrations are flashy and show the best of the product's capabilities and at the very least, engender interest and enthusiasm for technology.

Departmental Projects

Many centers focus on the normal divisions within their institution in order to find audiences with similar interests. Academic departments are targeted for on-site

presentations, special projects and technology centered meetings. One of the most successful strategies is the use of a "rolling" computer demonstration unit. This computer and peripherals on a cart can be brought to a department meeting for demonstration and on-site presentation. . Other centers, in an attempt to familiarize faculty with the facilities available in the center, invite a department to hold one its meetings at the center. As a part of the meeting, the center's resources are presented and demonstrated.

In addition to departmental meetings, a center may solicit members of a particular department to engage in a technology project that will benefit the entire department. The project team may be provided release time or other compensation for their efforts, but the goal is to use technology to enhance departmental curriculum or facilitate departmental tasks.

Faculty Teams

A variation on departmental technology projects is the interdepartmental faculty team. Centers that work use this strategy identify and help group faculty members interested in applying technology across curriculum lines. Such teams often consist of one or more content specialists, an individual interested in specific software and another interested in instructional design. The variations are as unique as the applications of technology. Such teams can cross departmental lines, build interdisciplinary teams and effectively apply technology within the confines of a single interdepartmental project.

Modeling

As an outgrowth of departmental and faculty teams, centers can use the products created to encourage other faculty members to become interested in technology. The faculty team that successfully uses technology in curriculum becomes a model for their peers.

Centers use a variety of techniques to publicize the models. These include an open house at the center to share the products, presentations by the team to other departments and forums to which other institutions may be invited.

Individual Strategies

Independent Study

Not all faculty can attend scheduled workshops. Yet they need formal instruction to effectively use technology. An alternative explored by some of the centers is the establishment of workshops using an independent learning format. These workshops use prepared curriculum, video tapes, cassettes, software tutorials and/or materials prepared for this purpose by the center staff. Regardless of the source of the materials, the workshop provides a training opportunity that will accommodate any faculty member's schedule. While they may be somewhat less effective than traditional workshops, independent study can answer the needs of those faculty who cannot receive training otherwise.

Individual Projects

A number of centers provide vehicles to support the efforts of individual faculty members interested in integrating technology into their courses. The most prevalent of these vehicles is the curriculum application project. Such projects provide a combination of one or more of the following incentives: release time, hardware loaners, professional development awards, and monetary compensation. Examples of such projects include release time to explore the use of telecommunications in science curriculum, the assignment of a computer to a faculty member who has developed a multimedia application, and extra compensation for

a faculty member who has restructured basic skills curriculum around the use of technology. Such projects use a variety of formats including campus mini-grants, technology practicums, technology internships and computers in curriculum projects.

Mentoring and Faculty Support

All centers support faculty through one-on-one contact. Some centers have open lab hours during which faculty are invited to come to the center with their questions and technology problems. Other centers send staff to faculty offices to assist. All centers concur that the integration of technology into curriculum demands that personal effort and contact be provided as the faculty member develops the skills necessary to use technology.

Once a faculty member becomes proficient, a center may recruit that individual to become a technology mentor within his or her department. The mentor assists the center in supporting faculty by answering questions within the department, helping when possible, disseminating information from the center and acting as a liaison between the department and the center.

Loans of Hardware and Software

Centers often loan hardware and/or software to faculty for use in their office or during academic breaks. The centers agree that placing the technology in the hands of the faculty in a convenient manner is a critical factor in its utilization. Some centers ask that the faculty member teach a workshop in the technology learned as a result of the loan. Some centers loan hardware and software for presentations and special projects only. Others allow loans only after a sequence of technology workshops has been completed. Still another loans laptops as a part of a semester long literacy workshop. Regardless of the conditions, a

generous loaner policy encourages experimentation and familiarity with technology.

Campus Strategies

Newsletters

Most centers sponsor newsletters or write columns for campus newsletters to keep faculty informed of the center's activities. These efforts help the centers stay in communication with faculty. They provide a forum for informing the faculty of newly acquired hardware and software. They help publicize workshops, faculty projects and other activities. Newsletters help a center keep a high profile on the campus in order to maintain faculty awareness of the services the center provides.

Open House

Some centers regularly sponsor an open house that allows the faculty members to visit the center and become acquainted with the services provided. Refreshments are usually served and the center's staff is available to answer questions. This informal, social orientation to a technology center helps overcome resistance to technology while at the same time acquainting the faculty with the center's activities. It also provides center staff with the opportunity to build relationships with faculty outside of the workshop environment.

Presentations

Most of the centers make presentations to the faculty during a term's opening session, for new employee orientation or whenever the campus provides the opportunity. As a service organization on the campus, the centers use faculty meetings to communicate their interest in supporting faculty in the use of technology. Presentations range from brief

orientations to center services to elaborate multimedia productions prepared by the center's staff. Faculty typically responds positively to the possibilities for professional growth featured in and demonstrated by such presentations.

Computer Fair

Sponsoring and organizing an on-campus computer fair to acquaint faculty with hardware and software is a campus service orchestrated by some of the centers. Vendors and their representatives are contacted and invited to set up displays of their products. The center and its services are typically on display as well. Refreshments are served or sold by a campus charitable group and faculty members visit the fair during their free time. This is an effective alternative when budgets prohibit travel to the conventions in which vendors typically exhibit. While a more complex effort towards technology awareness, the computer fair can easily become an annual campus event anticipated by faculty.

Steering Committee

Most centers have an advisory or steering committee. Faculty involvement on such a committee helps foster faculty commitment to technology and the work of the center. Steering committees can also assist in making decisions on competitive individual projects when budgets can fund only a few. They can also help keep the center attuned to the interests and needs of the faculty they represent.

Technology Solutions

Centers often function as a clearing house of information for vendors. Matching the needs of faculty with vendors products is a significant center service. Some centers will purchase equipment for faculty for use within the center. An example of such equipment is

the addition of a scanner so that faculty can convert older typed material into word processing documents. When acquisition is not possible, vendor information is forwarded to the appropriate faculty or department. Regardless of the method, matching faculty needs and appropriate technology solutions to those needs is an important activity in all of the centers.

Conclusion

Each of the technology transfer centers contributing to this paper has assisted its faculty in the integration of technology into their curriculum. All of the strategies presented here have proven successful. Each strategy, when applied by a particular center, changes in a kaleidoscope of variations appropriate to the unique campus environments. Yet each variation builds another structure that bridges the gap between teachers and their technology tools.

It is hoped that some of the strategies will be applicable to your institution's environment. You too will vary the strategies and evolve new ones of your own. Whatever methods you choose or create, each strategy applied assists faculty in developing effective techniques for teaching with technology. Each strategy used ultimately enhances the teaching-learning process. For centers charged with empowering educators with technology, the implementation of the strategies outlined in this paper provide an opportunity to be proactive in helping move education into the Information Age.

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